DIAGNOSTIC TEST   SET-5

NAME: STREAM: ROLL NO:

Please tick (√) the right answer only.   **Time: 1 hour.**

SUBJECT: CHEMISTRY

1. Mercury loses its mobility when it comes in contact with i. Air,   ii. Ozone, iii. H_2, iv. N_2

2. Oxygen is absorbed by i. P_2O_5,   ii. H_2SO, iii. Alkaline potassium pyrogallate solution   iv. None of these.

3. The electric charge for electrode deposition of one 1 gm-equivalent of a substance is

i. one ampere per second ii. 96500 coulombs, iii. One ampere for one hour, iv. None of these

4. Normality of a solution is the number of

i. gm-equivalents of solute per litre of the solution ii. moles of solute per litre of the solution

 iii. moles of solute per 1000 g of the solvent iv. moles of solute per 100 g of the solvent

5. N_2 forms five oxides of formulae N_2O, NO, N_2O_3, N_2O_4 and $N_2 O_5$. The formation of these oxides explain fully the law of i. Definite proportions ii. Multiple proportions, iii. Reciprocal proportions¸ iv. None of these

6. To prepare 250 ml of 0.5(N) Na_2CO_3 , you will require

i. 6.625 g of Na_2CO_3, ii. 2.65 g of Na_2CO_3, iii. 26.5 g of Na_2CO_3¸ iv. None of these.

7. 25 ml 0.5(N) NaOH require 20 ml of HCl solution for complete neutralization. Calculate the strength of HCl in normality. i. 0.5(N),   ii. 0.625(N), iii. 2(N),¸ iv. 0.25(N)

8. The effect of pressure on the volume of a given mass of a gas at a constant temperature is given by

i. Charle's Law   ii. Boyle's Law, iii. Graham's Law iv. None of these.

9. Concept of absolute temperature was first given by i. Charles ii. Boyle, iii. Dalton¸ iv. Kelvin.

10. Living systems are example of i. Open system   ii. Closed system,   iii. Isolated system iv. None of these

SUBJECT: PHYSICS

1. According to Kepler's law   (a) $T^2 \alpha r^3$ (b)$T^2 \alpha 1/r^3$ (c) $T^2 \alpha r^3$ (d) $T^3 \alpha r^2$

2. Streamline flow becomes turbulent when   (a) R >1000   (b) R< 1000   (c) R>2000 (d) R< 2000   where R is Reynold's number

3. Capillarity action is due to   (a) surface tension (b) viscosity (c) gravity (d) elasticity

4. In a uniform circular motion
        (a) centripetal force is acting towards the centre
        b) centripetal force is acting away from the centre
        c) centripetal force is acting in both the direction depending on the situation
        (d) none of these

5. Watt is the unit of   (a) electric power (b) mechanical power (c) thermal power (d) none of these

6. Electrical energy is converted into heat energy in accordance with
        (a) Joule's law (b) Ohm's law (c) Coulomb's law (d0 Pascle's law

7. Measurement of current is done by   (a) galvanometer (b) ammeter (c) voltmeter (d) potentiometer

8. Kirchoff's law forms the bases of (a) electrical measurement (b) thermal measurement (c) mechanical measurement (d) none of these

9. In SI electric potential volt is defined as
        (a)1V = 1J/c (b) 1V = 1erg/e. s.u. (c) !V = 1erg/ 1 stat coulomb (d) none of these

10. Ohm's law is   (a) R = VI   (b) V = IR   (C) V =I/R   (d) VR = I

SUBJECT: MATHEMATICS

1. Total distance of a journey is 120 km, If one goes by 60 km/h and comes back at 40 km/h, what is the average speed during the journey?
   (a) 48 km/h (b) 50 km/h (c) 84 km/h (d) 36 km/h
2. Two cars are 15 km apart. One is turning at a speed of 50 km/h and the other at 40 km/h. How much time will it take for the two cars to meet?
   (a) 3/2 hours (b) 2/3 hours (c) 4 hours (d) 8 hours
3. Three types of tea A, B & C costs Rs. 95/kg, Rs. 100/kg & Rs. 70/kg respectively. How many kgs of each should be blended to produce 100 kg of mixture worth Rs. 90/kg, given that the quantitites of B and C are equal ?
   (a) 70,15,15 (b) 50,25,25 (c) 60,20,20 (d) 40,30,30
4. The price of sugar increases by 20%, by what % should a housewife reduce the consumption of sugar so that expenditure on sugar can be same as before ?
   (a) 15% (b) 16.66% (c) 12% (d) 9%
5. A man spends half of his salary on household expenses, ¼th for rent, 1/5th for travel expenses, the man deposits the rest in a bank. If his monthly deposits in the bank amount 50, what is his monthly salary ?
   (a) Rs. 500 (b) Rs. 1500 (c) Rs. 1000 (d) Rs.900
6. What is the smallest number by which 2880 must be divided in order to make it into a perfect square ?   (a) (b) 4 (c) 5 (d) 6
7. A father is 30 years older than his son; however, he will be only thrice as old as the son after 5 years. What is father's present age ?
   (a) 40 years (b) 30 years (c) 50 years (d) none
8. If an item costs Rs. 3 in '99 and Rs. 203 in '00, what is the % increase in price ?
   (a) 200/3% (b) 200/6% (c) 100% (d) none
9. 5 men or 8 women do equal amount of work in a day. A job requires 3 men and 5 women to finish the job in 10 days. How many women are required to finish the job in 14 days ?
   (a) 10 (b) 7 (c) 6 (d) 12
10. What is the greatest among 4/11, 5/6 & 3/7 ?
    (a) 3/7 (b) 5/6 (c) 4/11 (d) 6/5 (e) none

SUBJECT: ENGLISH

In these questions, each word is followed by four options. For each of the given words, choose the option that is the best ANTONYM of the given word.

1. Abstinence -a) Celerity   b) Conviviality   c) Impertinence d) Indulgence

2. Fortification -a) Syncopation b) Enervation   c) Trepidation   d) Subsistence

3. Antediluvian a) Current   b) Arid c) Futuristic   d) Recondite

4. Indefatigable-a) Corporal   b) Lethargic   c) Bucolic   d) Stressful

5. Surfeit -a) Chivalry   b) Continuance c) Restriction   d) Dearth

6. Irreproachable -a) Paradoxical   b) Endemic   c) Blameworthy d) Ostentatious

7. Imperative -a) Superfluous   b) Inferential   c) Magnanimous   d) Servile

8. Conceit -a) Melancholy   b) Self-effacement   c) Turpitude   d) Chutzpah

9. Inchoate -a) Ripe   b) Senile   c) Exotic   d) Cardinal

10. Salubrious a) Intermittent   b) Malodorous c) Stupendous   d) Deleterious